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(54) A carton blank, and a carton made therefrom.

(57) A carton blank for making a tubular carton which includes an additional panel joined to one of the body panels or one of the end panels by a break line, such that upon erection of the carton from the blank the additional panel detaches at the break line from the panel to which it was joined, and is adhesively secured to an outer surface of another of the body panels.

Preferably the adhesive is that known as "high-tack" so that the label can be peeled from the said another of the body panels and re-affixed e.g. to a prescription or other commodity listing.

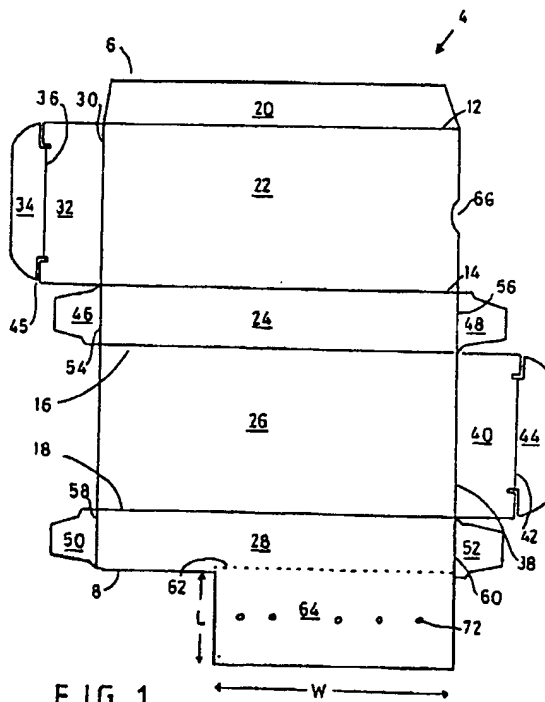


FIG. 1

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A CARTON BLANK, AND A CARTON MADE THEREFROM

This invention relates to a carton blank, and to a carton made therefrom, specifically a tubular carton.

Tubular cartons are conventionally made in rectangular form from a carton blank which has opposed transverse edges, and four fold lines therebetween. The edges and fold lines of the carton blank are parallel or nearly so, and define a first pair of panels (between the first and second fold lines, and between the third and fourth fold lines), and which when the carton is erected are respectively the top and bottom panels of the carton; a second pair of panels (between the second and third fold lines, and between the fourth fold line and the adjacent transverse edge) and which when the carton is erected are respectively the first and second carton sidewalls; and a securement panel between the first fold line and the transverse edge adjacent thereto and which is adapted to be - (adhesively) secured to a face of the second carton sidewall for lay-flat carton assembly and subsequent carton erection. In the assembled lay-flat and erected carton conditions, the securement panel is concealed within the tubular carton. Such a carton blank is hereinafter referred to as a carton blank of the kind described.

Carton blanks are traditionally made and assembled into the lay-flat condition by the carton manufacturers, and are despatched in bulk in the lay-flat condition to the packaging plant where they are erected prior to being filled.

Such erected and filled cartons are widely used in commerce. In use, often the carton will carry a label, which is adhesively secured to the carton, and which for example indicates the price of the carton and contents. Such labels are applied by the individual product outlet or so-called "point of sale"; and once used by the cashier to check the payment due, are left affixed to the carton which is taken away by the customer. Some adhesively-secured labels are so designed that they are damaged if an attempt is made to peel off the label from the carton, for instance to thwart attempts by potential customers to exchange price labels between packages of different values.

The present labelling practice however has a number of disadvantages. Specialised staff and labelling equipment are needed at each product outlet. The labels will often contain only one piece of information e.g. the price. The carton may be incorrectly labelled.

It is an object of our invention to reduce or avoid these disadvantages, by providing according to our invention a carton blank of the kind described which has an additional panel joined to the

opposed transverse edge of the second carton sidewall by a break line. Our additional panel can easily be provided during manufacture of the carton blanks, and yet allows the carton to be assembled in the lay-flat condition and to be erected at the carton filling station by existing packaging equipment.

We prefer the additional panel of our invention to become adhesively secured to the lay-flat carton, and thereafter to be peelable in toto from the erected carton, leaving the carton contents untouched.

We foresee particular advantages for our invention in the packaging of medical products, since currently many such products are made available to dispensaries in large volume packs from which the prescribed quantity e.g. of pills or tablets, has to be removed and then individually re-packed for the patient. Preferably the additional panel is secured by an adhesive selected from the group which allows the label to be re-affixed e.g. to the prescription; then the product dispensed can be independently checked against the prescription, which is retained by the pharmacist or other dispenser; if another and potentially dangerous product has been inadvertently dispensed instead of that prescribed, the retained prescription and affixed label allows quick identification of the patient and of the remedial action required; furthermore if the affixed label is printed at the time of manufacture with an electronically scannable code (e.g. European article numbering system) or a human readable code (P.I.P. system) this can then be used either in a computerised or manual price look-up system to assess the cost, or selling price, of the specific package with appreciable time savings; payment to the dispensary can be readily calculated if this is made from a central fund, as in the U.K. National Health Service, to whom the prescriptions are submitted.

Thus according to another feature of our invention we provide a method of assembling a lay-flat carton from a carton blank of the kind described which includes the steps of applying an adhesive to at least one of the securement panel and the second sidewall panel, applying adhesive to at least one of the top panel and the additional panel, folding the top panel and thus the securement panel about the second fold line, thereafter folding the second sidewall and thus the additional panel about the fourth fold line, the arrangement being such that the second sidewall adheres to the securement flap, and the additional panel adheres to the top panel, the securement panel being concealed within the assembled carton.

Preferably the break line is offset from the first fold line such that during erection the carton upon inwardly directed pressure on the second and fourth fold lines, the additional panel separates at the break line from the second sidewall whilst remaining adhesively secured to the top panel.

Thus according to a further feature of our invention we provide a carton erected from a carton blank of the kind described, in which the additional panel is secured to the top panel but separated from the second sidewall.

The adhesive selected for securement of the additional and peelable panel will usually be a different adhesive to that used for the permanent adhesion of the securing panel.

The invention will be further described by way of example with reference to the accompanying drawings, in which :

Figs. 1 is a plan view of a carton blank according to the invention;

Fig. 2 is a plan view of a carton according to the invention, in the lay-flat condition, and assembled from the blank of Fig. 1;

Fig. 3 is a perspective view of the carton of Fig. 2 in its erected condition.

Fig. 4 is a carton blank according to another embodiment of the invention;

Fig. 5 is a carton blank according to a further embodiment of the invention;

Fig. 6 is a plan view of the carton of Fig. 5, in the lay-flat condition; and

Fig. 7 is a perspective view of the carton of Fig. 5 in its erected condition.

The blank 4 has transverse edges 6,8 and four parallel fold lines, 12,14,16,18 which define five panels 20,22,24,26,28. Panels 22 and 26 are the same size, and provide respectively the top and bottom carton panels. Panels 24,28 are also of the same size and provide respectively the first and second carton sidewalls. In this embodiment the sidewalls are the smaller panels, but in another embodiment they could be larger than the top and bottom carton panels.

Panel 22 is joined by fold line 30 to first end panel 32, which is itself joined to first tuck-in flap 34 by fold line 36; whilst panel 26 is joined by fold line 38 to second end panel 40, which is itself joined by fold line 42 to second tuck-in flap 44. Tuck-in flaps 34,44 have cuts 45. End panels 32,40 are oppositely directed.

Panels 24,28 carry respective cover flaps 46,48 and 50,52. by way of fold lines 54,56 and 58,60.

Secured to transverse edge 8 of panel 28 by way of break line 62, is an additional panel 64, of depth L and having a purpose to be described below. Panel 22 has a cut-out 66, centred at the

distance L from fold line 14. In this embodiment panel 64 has a width W, which is less than the width of panel 28; though in an alternative embodiment it could have the same width as panel 28.

With the carton blank viewed as in Fig. 1, the undersides of panels, 22,24,26,28,32,40, which are the panels visible when the carton is fully erected, will conventionally be printed upon by the carton manufacturer with wording and/or designs appropriate to the product to be packaged; though for certain e.g. medical, applications the outside surfaces of the carton may for instance be plain white. Prior to printing these carton surfaces will conveniently have been primed with a lacquered surface, ultra-violet cured, to ensure firm bonding of the print.

To assemble the carton to the lay-flat condition of Fig. 2 from the blank of Fig. 1, the under face of panel 20 is coated with adhesive, and panel 22 - (and thus panel 20) is then folded about fold line 14 so that these panels 22,20 lie face to face with panels 24,26. Conveniently panel 20 has a slightly smaller depth than panel 24, so that edge 66 approaches but does not reach (and therefore does not cross) fold line 18. Panel 28 (and thus panel 64) is then folded about fold line 18 until the upper face of panel 28 as seen in Fig. 1 engages and adheres to the under face of panel 20. Panel 64 partly covers the cut-out 66.

Additionally, the upper face of panel 64 carries in a central area a high tack adhesive 72, as shown in discrete areas, but alternatively joined as a central strip, so that panel 64 adheres to the (printed) under face of top panel 22. The adhesive is selected so that panel 64 is secured firmly, but removably, to the top panel 22. A suitable high tack adhesive is available from Croda Adhesives Limited of Winthorpe Road, Newark, Nottinghamshire, England. In the lay-flat condition of Fig. 2, the cartons are despatched in bulk by the carton manufacturer to a packaging station, which may be a carton filling area at a pharmaceutical manufacturer. Prior to despatch the under face of panel 64 as seen in Fig. 1, and which becomes the visible face as seen in Fig. 2, is e.g. marked with intended content details, such as the product, quantity, batch number and manufacturer. These details can not only be checked before despatch, but can also be checked upon delivery before these lay-flat cartons are forwarded to the filling area, to help ensure that the correct product is packed. Alternatively these details could be applied by the manufacturer of the product to be packed, again prior to forwarding of the lay-flat cartons to the respective carton filling area.

The carton is erected i.e. to the arrangement as shown in Fig. 3, by pressure in the direction of arrows P against fold lines 14,18. During erection, panel 64 breaks away from panel 28, to remain generally in a plane parallel to top panel 26, to which as described above it is adhesively secured by hard-tack adhesive 72. To ensure a clean break of panel 64 from panel 28, break line 62 comprises a line of perforations offset from edge 8 of panel 28 such that panel 64 as viewed in Fig. 3 overhangs second carton sidewall 28. It is an advantage of our arrangement that the integrity of carton 10 is retained against external contaminants, since the break away of panel 64 from panel 28 occurs adjacent fold line 12, so that panels 20 and 22 remain intact to back the gap created between panels 64 and 28.

The selection of a high-tack adhesive 72 allows the panel 64 to be peeled off panel 22 and adhesively applied elsewhere e.g. to a prescription, so that a separate check of the items dispensed against the prescription can be made, and any mistakes quickly rectified. The panel 64, may carry a bar code for use in computer price look-up, stock-taking and re-ordering. If the product outlet is a dispensary which is reimbursed by a central authority, for instance the British National Health Service, the panel 64 adhering to the prescription allows the amount due to be readily checked and calculated, again by a computer system if required.

Panel 64 can be peeled off by finger pressure at cut-out 66 and/or at the overhanging perforations at break line 62.

Thus we are able to provide a carton which is suitable for hygienic original pack dispensing, with less chance of content mis-labelling, permitting multiple use of a peelable label, allowing assembly and erection on existing manufacturing plant, and with reduced handling costs at the point of sale.

The embodiment of Fig. 4 is of an alternative carton arrangement of the parallel-tuck type. The carton is assembled to the lay-flat condition as described with reference to the arrangement of Figs. 1-3; in an alternative embodiment, adhesive is applied to panel 128 such that following folding of panel 122 (and thus panel 120) about fold line 114, and the subsequent folding of panel 128 (and thus panel 164) about fold line 118, panel 128 overlies the (previous under-face of) panel 120 and adheres thereto. Upon erection of the carton, panel 164 remains secured to (the former under-face of) panel 122 and severs at break-line 162 from panel 128. Flaps 146, 148 and 150, 152 are folded generally perpendicular to the respective panels 124, 128; and panels 132 and 140 are then also folded generally perpendicular to panel 126, with tuck-in flaps

134, 144 being inserted into the erected carton i.e. generally in engagement with the upper face of panel 122 (as viewed in Fig. 4) to close the opposite ends of the carton.

In an alternative embodiment, panel 122 can have a cut-out similar in position and purpose to the cut-out 66 of Figs. 1-3, i.e. for the removal when required of panel 164.

The carton blank of Fig. 5 is assembled into a lay-flat carton in similar manner to the embodiment of Figs. 1-3, with the under-face of panel 220 coated with adhesive, and thereafter panel 222 - (and thus panel 220) is folded about fold line 214; panel 228 (and thus panel 264) is then folded about fold line 218 so that the upper face of panel 228 as seen in Fig. 5 engages and adheres to the under-face of panel 220. For subsequent erection of the carton, the cover flaps 246, 248 and 250, 252 are folded generally perpendicular to the respective panels 224, 228 and adhesive is applied to the under-face of one of the pairs of panels 232, 233 and 239, 240 whereupon this panel is folded generally perpendicular to the respective panel 222, 226, followed by the folding of the other of each respective pair. Thus the other of the pair of these panels adheres to the panel first folded, to form a glued-end skillet carton. During erection panel 262, which was adhesively secured to panel 222 during assembly by hard tack adhesive 272, breaks from panel 228 at the line of rupture 262.

In an alternative arrangement, which extends the scope of the invention, in relation to glued-end skillet cartons, the additional panel could alternatively be connected to e.g. panel 240 by a break line, generally at the position of panel 44 of the embodiment of Figs. 1-3. Panel 240 would thus be the other of each respective pair as discussed in the preceding paragraph, and when adhered to the panel first folded i.e. panel 239, a further folding operation would be needed to fold the additional panel into adhesive engagement with the (under-surface as seen in Fig. 5 of) panel 222. Thus in the alternative arrangement the additional panel carried by panel 240 would replace the additional panel carried by panel 228; and would form a peelable label attached to the outside of the carton, separated from panel 240 at the break line between panel 240 and the additional panel.

Claims

1. A carton blank having four parallel fold lines (12, 14, 16, 18) defining five carton body panels - (20, 22, 24, 26, 28), the carton body panels comprising a pair of side panels (24, 28), top and bottom panels (22, 26), and a securement panel - (20), and at least one end panel (40) joined to a

body panel by a fold line (38) characterised by an additional panel (64) joined to one of said body panels and end panel by a break line (62).

2. A carton blank having first and second opposed transverse edges (6, 8) four fold lines (12, 14, 16, 18) between the transverse edges (6, 8), the said transverse edges and fold lines being parallel, the fold lines defining five carton body panels (20, 22, 24, 26, 28), the carton body panels comprising a first pair of panels (22, 26) respectively between the first (12) and second (14) fold lines, and between the third (16) and fourth (18) fold lines, and a second pair of panels (24, 28) respectively between the second (14) and third (16) fold lines and between the fourth (18) fold lines and the adjacent transverse edge (8), and a securement panel (20) between the first fold line (12) and the said first transverse edge (6) adjacent thereto characterised by an additional panel (64) joined to one of said body panels (28) at the said second transverse edge (8) by a break line (62).

3. A carton blank as claimed in claim 1 or claim 2 characterised in that the additional panel (64) has a lesser dimension (W) than the panel (28, 240) to which it is joined.

4. A carton blank as claimed in any preceding claim characterised in that the break line (62) is parallel to but spaced from an edge (8) of a panel (28, 40) to which the additional panel is joined.

5. A carton blank as claimed in any of claims 2 to 4 characterised in that the said first panel (22) defined by the first (12) and second (14) fold lines has a cut-out (68) in one of the first panel (22) side edges, the additional panel (64) having an additional panel side edge co-terminous with the first panel side edge, the cut-out (66) being spaced from the second fold line (14) a distance along said side edge equal to the length of the additional panel side edge.

6. A lay-flat carton made from a carton blank as claimed in any of claims 1 to 5 in which the securement panel is adhesively bonded to that side panel (28) remote therefrom characterised in that the additional panel (64) is adhesively bonded to a body panel (22, 24, 26, 28).

7. A lay-flat carton as claimed in claim 6 when dependant upon claim 2 characterised in that the additional panel (64) is adhesively bonded to that body panel (22) between the first (12) and second (14) fold lines.

8. An erected carton made from the lay-flat carton of claim 6 or claim 7 characterised in that the additional panel (64) is adhesively secured to the body panel but separated at the break line from the said one of said body panels.

9. An erected carton made from the lay-flat carton according to claim 6 or claim 7 characterised in that the additional panel (64) is adhesively secured to the body panel with the additional panel folded out of the plane of the end panel (40).

10. A method of erecting a carton from the blank according to any of claims 1 to 5 comprising the steps of making a lay-flat carton as claimed in claim 8 and then urging together the second and fourth fold lines characterised in that said urging together is centred until the said additional panel separates at the break line from the said one of the panels whilst remaining adhesively secured to the said body panel.

11. A method of erecting a carton from the blank according to any of claims 1 to 5 comprising the steps of making a lay-flat carton by adhesively bonding the securement panel (20) to that side panel (28) remote therefrom characterised by an extra step of folding the additional panel (64) out of the plane of the end panel (40) and then adhesively securing the additional panel (64) to said the body panel.

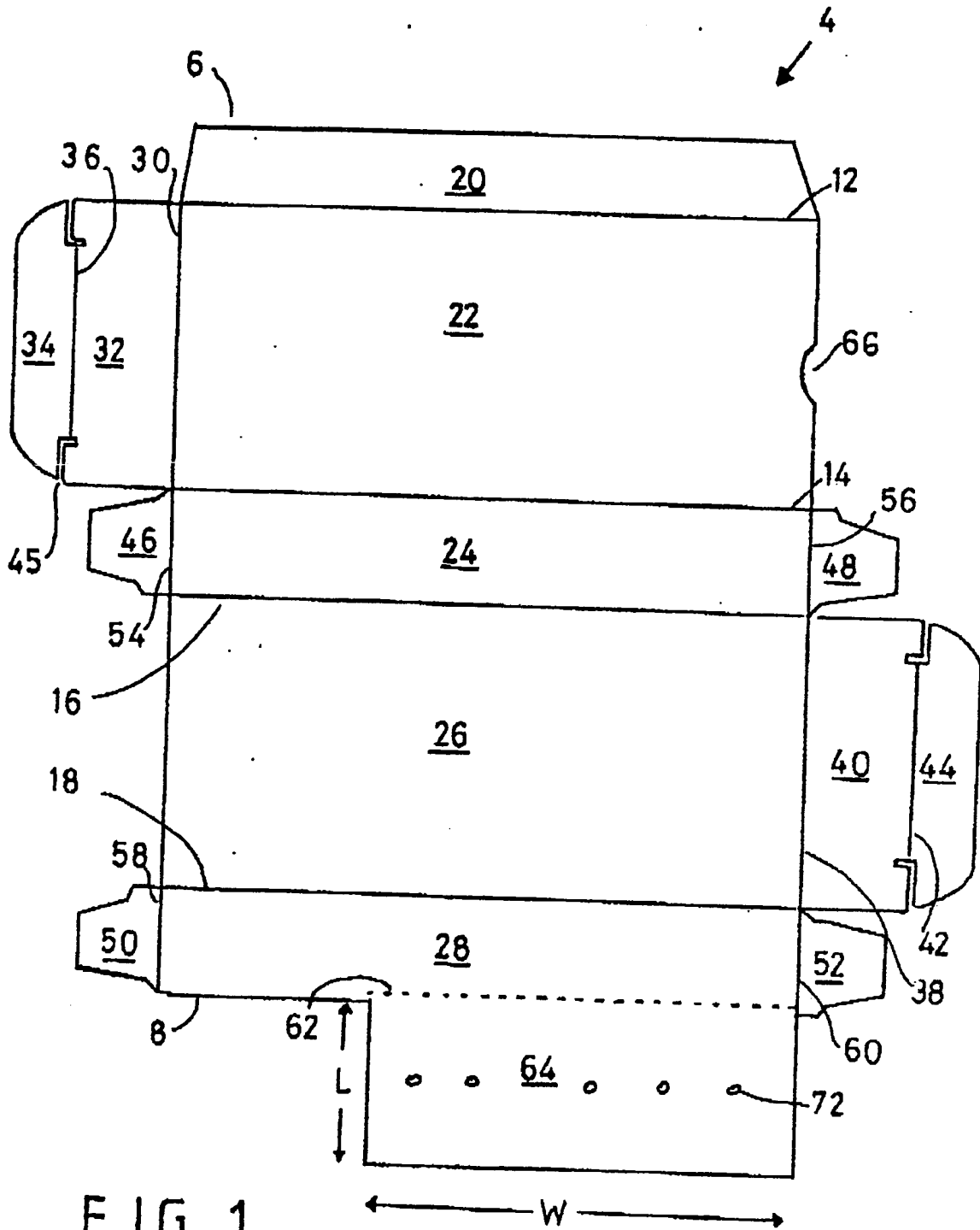


FIG. 1

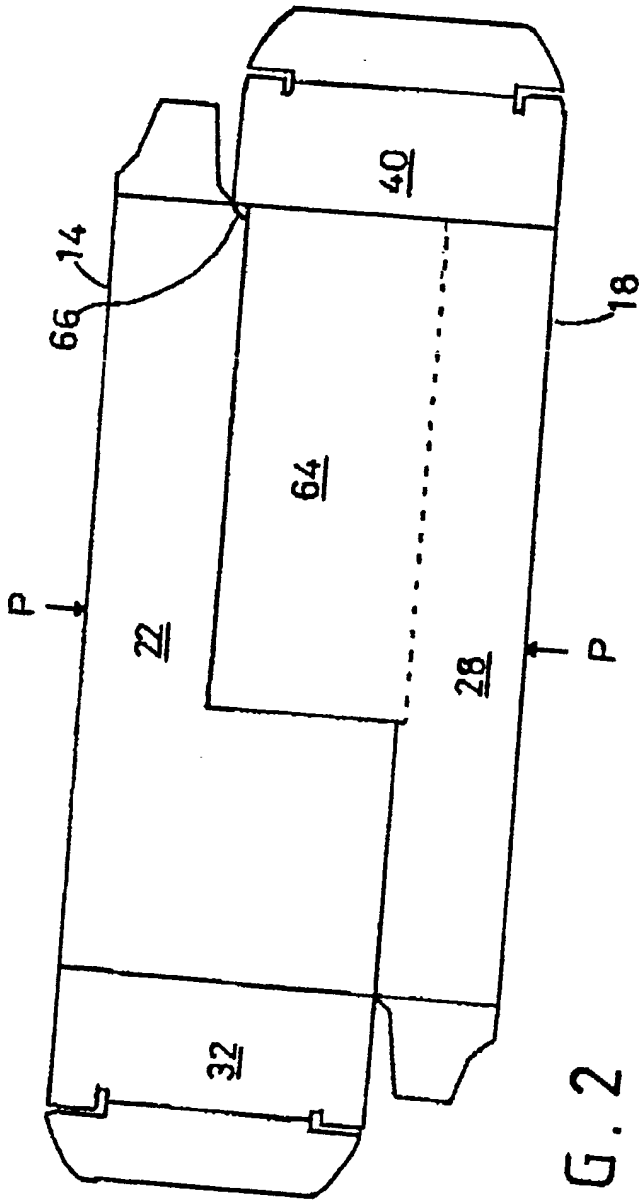


FIG. 2

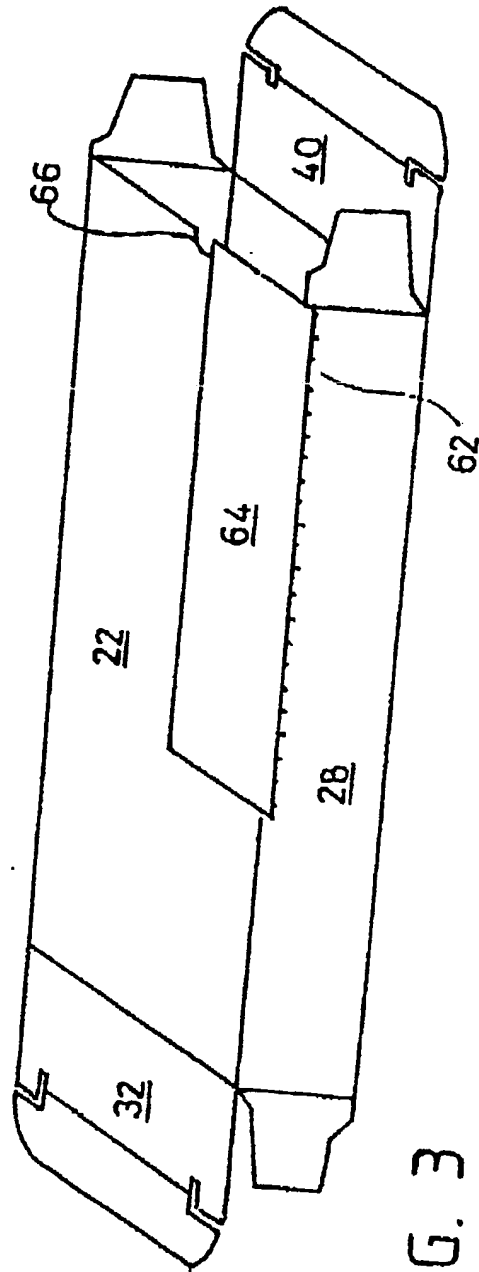


FIG. 3

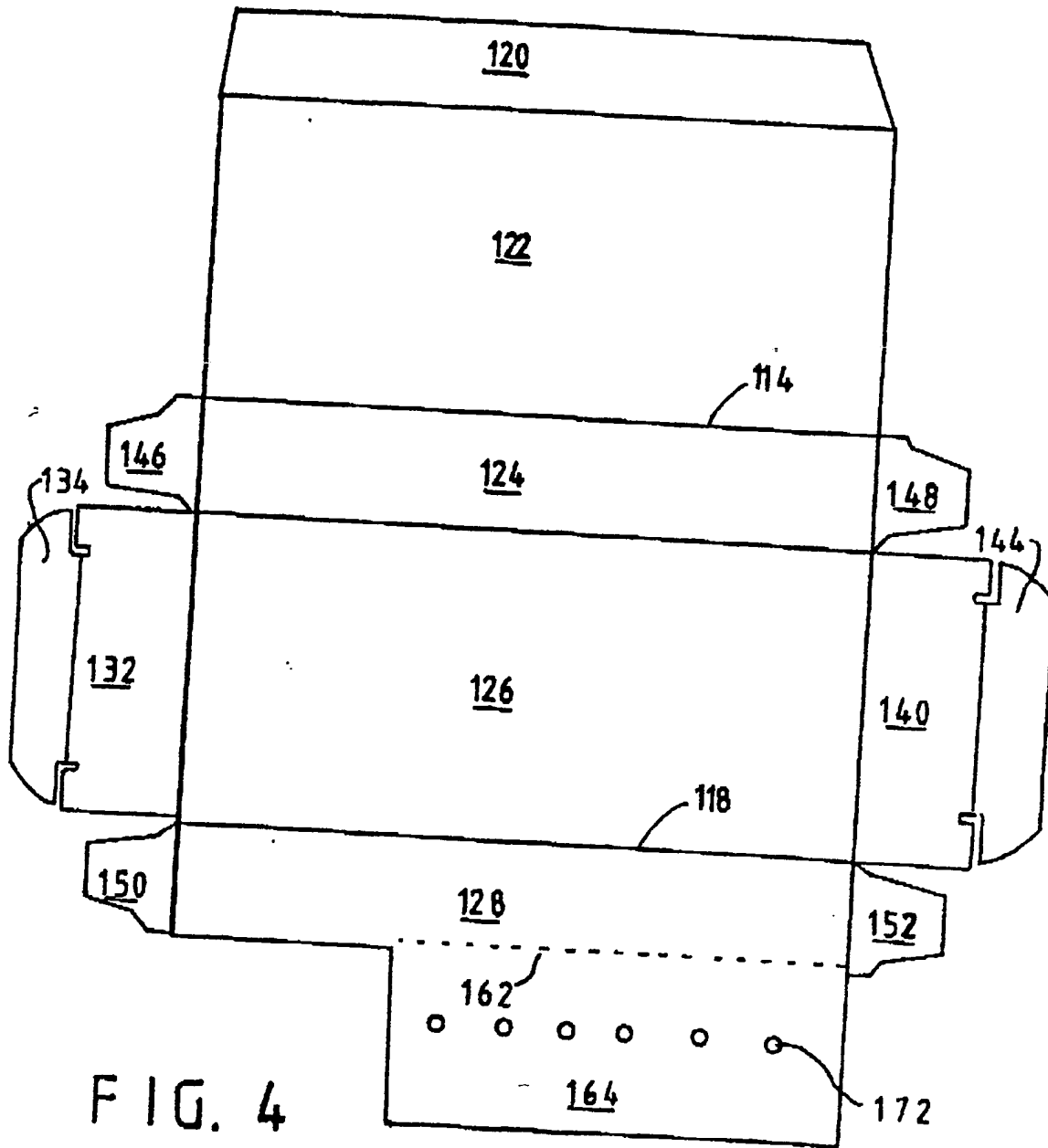


FIG. 4

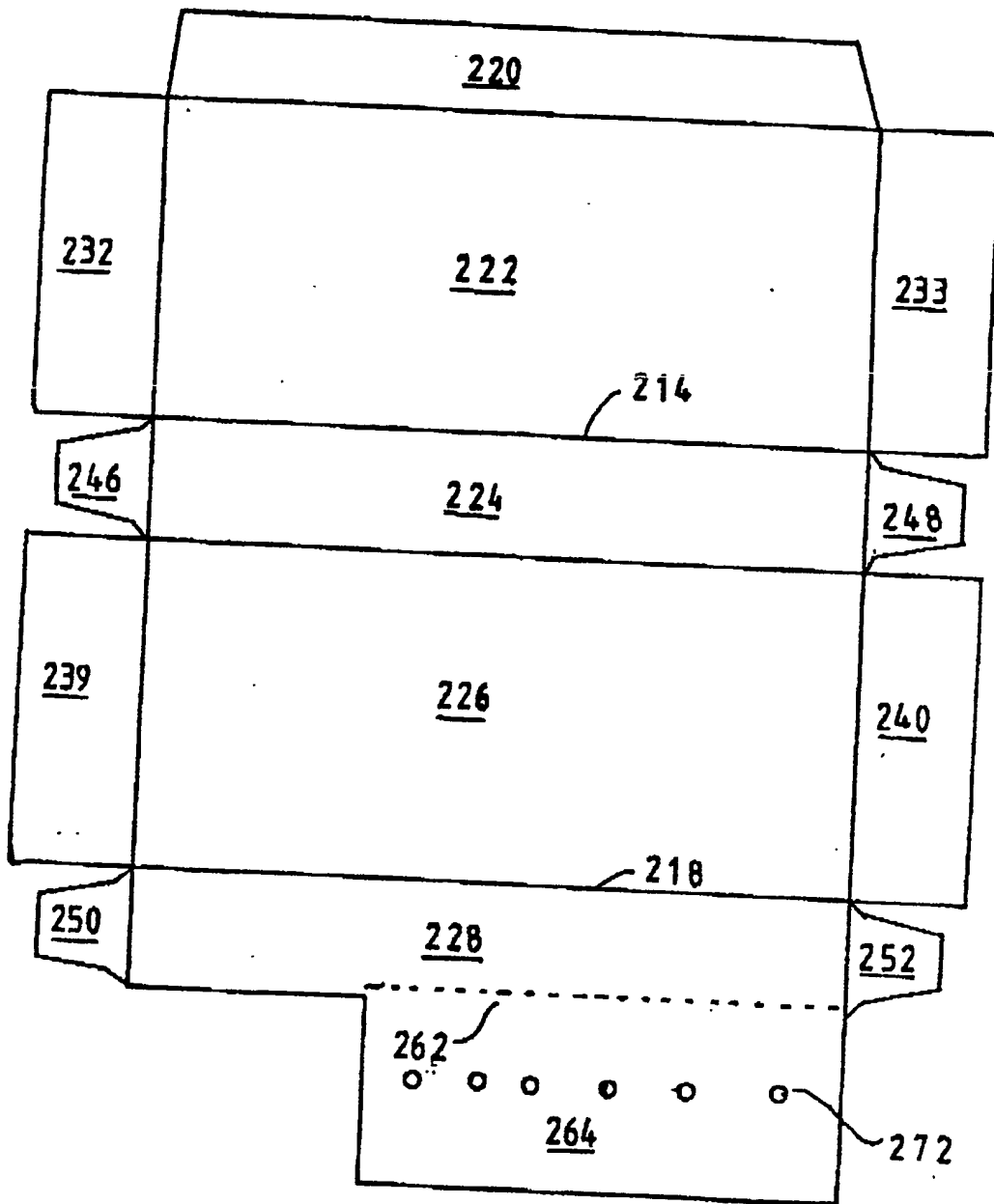


FIG 5

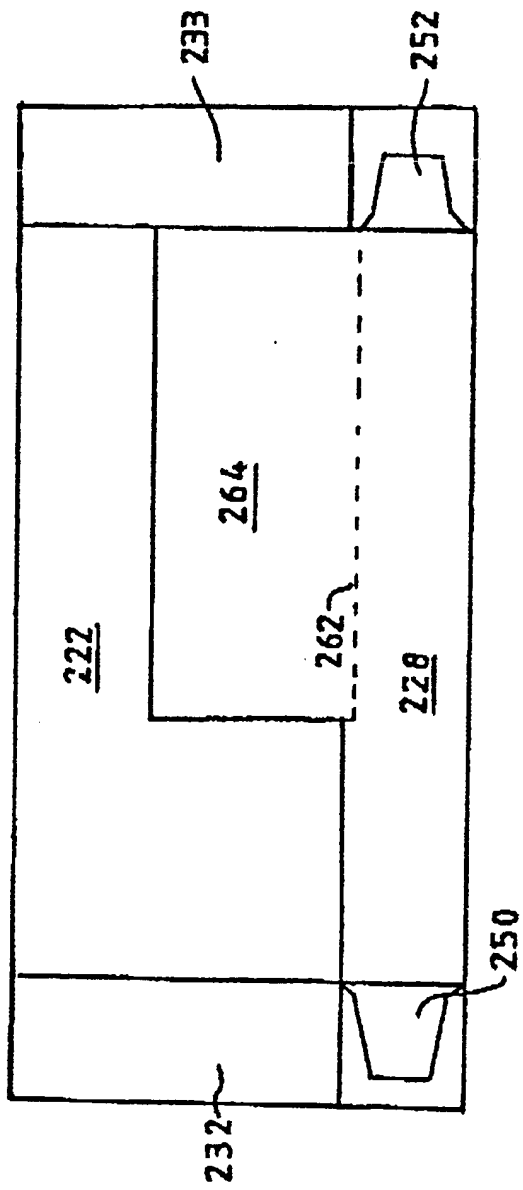


FIG. 6

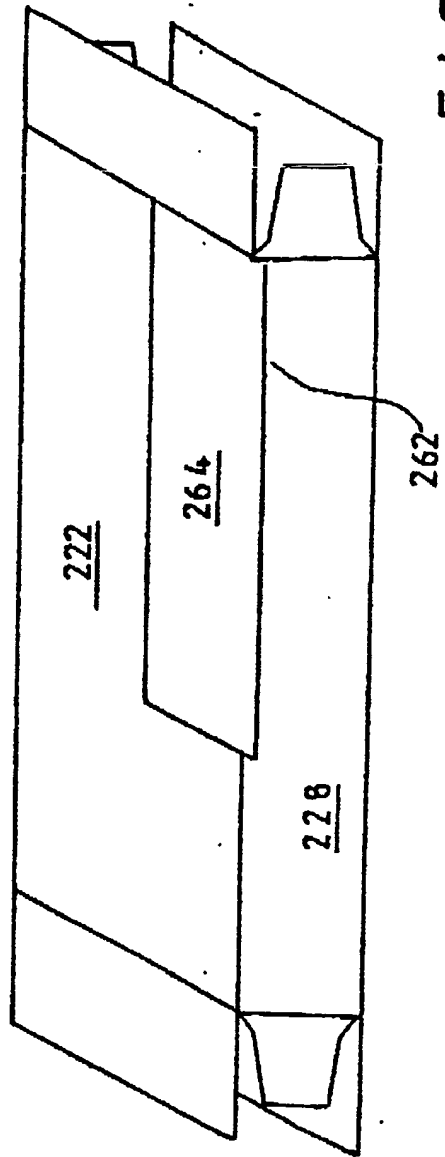


FIG. 7